Claims

1. An optical waveguide, said optical waveguide comprising a fiber core, a fiber cladding and an outer coating, wherein the outer coating consists of a magnetizable material or a material having magnetic properties, and that by means of this outer coating a sufficiently large magnetic field is generated that this, as well as the Faraday effect in the fiber core and the length of the light waveguide in that manner, to cause a substantial polarization rotation.

2. The optical waveguide according to Claim 1, wherein the outer coating is subdivided into two half-shells whose magnetic orientations are mutually opposed.

3. The optical waveguide according to Claim 1, wherein the core is doped with YIG material.

4. The optical waveguide according to Claim 1, wherein the optical waveguide is a single waveguide.

5. An optical isolator with a polarizer and a polarization rotor (13), having an associated light waveguide fiber having a fiber core showing a Faraday effect, a fiber cladding, and an outer fiber coating, wherein the outer fiber coating is such that it generated a permanent magnetic field in the fiber core, and that this magnetic field is sufficiently large that, along with the Frarday effect of the fiber core and the length of the light waveguide in such a manner to cause a substantial polarization rotation.

6. The optical isolator according to Claim 5, wherein the polarizer comprises a polarization-preserving or polarization-rotating glass fiber, wherein the fibers of the polarizer and the polarization rotator are constructed in one piece as a continuous, spliced optical glass fibers.

7. The optical isolator according to Claim 5, wherein the outer coating of the optical waveguide fiber is subdivided into two half-shells whose magnetic orientations are mutually opposed.

8. The optical isolator according to Claim 5, wherein the core is doped with YIG material.

9. The optical isolator according to Claim 5, wherein the optical waveguide fiber is a single waveguide.